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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,497	04/17/2007	Young-Jun Kwon	1203-109	6443

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HOUSTON, TX 77002

EXAMINER

GUIDOTTI, LAURA COLE

ART UNIT	PAPER NUMBER
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3727

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,497	Applicant(s) KWON, YOUNG-JUN	
	Examiner Laura C. Guidotti	Art Unit 3727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 9-11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskovich, US 5,628,082 in view of Kweon, US 6,090,488, Trojanowski et al., US 2001/0030460, and Oishi, US 5,799,353.

Moskovich teaches a toothbrush comprising a toothbrush body (30) with a head at one end (shown in Figure 16), the head having longitudinally elongate tufts adjacent respective outer edges of the head (88), the head having laterally elongate tufts formed centrally of the head between the longitudinally elongate tufts (90), a first plurality of rows of bristles set in a longitudinally elongate manner (88), and a second plurality of rows of bristles set in a laterally elongate manner (90). Regarding claim 13, the toothbrush has a head formed at an end of the body (Column 9 Lines 15-18) then the bristles are positioned on the toothbrush (Column 9 Lines 18-26). Moskovich recognizes that conventional brushes have bristles attached by staples (wire) in openings (Column 9 Lines 18-19, 44-46) and Moskovich also discusses that the toothbrush may have other features including varying bristle length (Column 9 Lines 54-55). Moskovich does not disclose that the bristles are needle-shaped, that the elongate tufts are bristles positioned by a wire in longitudinally or laterally elongate grooves, or

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that the length of the first plurality of bristles is longer than the second plurality of bristles by 1.5 to 3.5 mm.

Kweon teaches needle-shaped bristles for a toothbrush (see Figure 4, Abstract) for being able to flexibly clean periodontal pockets between the teeth and gums and be comfortable for a user while brushing (Column 1 Lines 13-20, Column 2 Lines 28-32). Regarding claims 10 and 14, the bristles have end points from 0.01 to 0.03 mm in thickness (Figure 4) and tapers from 5 to 12 mm in length (Figure 4).

Trojanowski et al. teach first and second pluralities of rows of bristles (6-10), wherein a length of each of the bristles set in the outer edge of the head part (in rows 6 and 10) is longer than a length of each of the bristles set in the central portion of the head (in rows 7-9) by 1.5 to 3.5 mm (paragraph 9) so that the toothbrush can effectively access and clean the subgingival regions between the teeth and gum line (paragraph 45).

Oishi teaches an elliptical elongate tuft set in an elongate groove (5), the major axis W is 4.6 mm in length and the minor axis (D) is 1.6 mm (Column 9 Lines 36-39), the tuft provides stiffness while effectively removes plaque and maintains durability of the tuft (Column 12 Lines 51-54, Column 13 Lines 1-5).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the bristles of Moskovich to be needle-shaped, as Kwon teaches, so as to provide bristles that can comfortably clean a users teeth and gums, and further it would have been obvious for one of ordinary skill in the art at the time of the invention to modify the lengths of each of the bristles of Moskovich so that the ones at the outer

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edge of the head are longer than the bristles set in a central portion of the head by 1.5-3.5 mm, as Trojanowski teaches, so that the outer rows of tufts can access and clean the subgingival regions of the teeth while brushing ones teeth, and lastly it would have been obvious for one of ordinary skill in the art at the time of the invention to conventionally mount the bristles of Moskovich by providing elliptical elongate grooves in which the dimensions of the major and minor axis of the elongated grooves are in the range of 2.5-5.0 mm and 1.6-2.5 mm as Oishi et al. teach, in order to provide an elliptical elongate tuft dimension that can effectively remove plaque without damaging gingiva and yet remain stiff and durable.

2. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskovich, US 5,628,082, Kweon, US 6,090,488, Trojanowski et al., US 2001/0030460 and Oishi, US 5,799,353 as applied to claims 9 and 13 in view of Kaneda et al., US 6,088,869.

Moskovich, Kweon, Trojanowski et al., and Oishi disclose all elements mentioned above, however do not disclose that the bristles are folded and set in the grooves so that there is a height difference of 0.5 to 1.5 mm between both ends of the folded needle-shaped bristle. It is noted that Moskovich recognizes that the bristles of the tufts can be set in a conventional stapled (folded) manner to the head (Column 9 Lines 18-19).

Kaneda et al. teach that each of the needle-shaped bristles are folded in an asymmetric U-shaped manner so that the exposed ends of the bristles have a height difference of 0.5 to 1.5 mm (Figures 1-2, Column 7 Lines 18-21) so that one end of the

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bristle is able to enter interproximal and periodontal areas to scrape plaque while the other end can simultaneously remove dental plaque accumulated on the surface of the teeth and gums.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the toothbrush of Moskovich, Kweon, Trojanowski et al., and Oishi by setting the bristles into the grooves by folding them so that there is a height difference of 0.5 to 1.5 mm between both ends of the folded bristle, as Kaneda et al. teach, so that each bristle is able to provide two ends that serve two different purposes in cleaning.

Response to Arguments

3. Applicant's arguments filed 27 August 2010 have been fully considered but they are not persuasive.

The Applicant argues that the Moskovich patent does not disclose the claimed invention. The Examiner reminds the Applicant that the claims have been rejected under 35 USC 103(a) and that the deficiencies of Moskovich can be found in the other prior art references used in the rejection. The Applicant states that the bristle material of Moskovich and the material used in the present invention are different however the bristle material is not claimed. The Applicant argues that none of the bristle tufts of Moskovich are set in longitudinally elongate grooves or that the tufts are made of rubber, not bristles. The Examiner respectfully disagrees. Moskovich states that their bristles may be mounted as conventional brushes have been, and can be attached by staples (wire) in openings (Column 9 Lines 18-19, 44-46). The tufts (such as 88, 90)

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are comprised of bristles, that can alternatively be made of rubber, as stated in Column 6 Lines 12-18. Moskovich recognizes and allows for the possibility of mounting their bristles in the conventional manner of mounting bristles by using staples/wire.

The Applicant states that Kweon was invented by the same inventor as the present invention. Kweon is applicable as prior art because the date of the issued patent is 18 July 2000 and the present application has its earliest priority date of 16 March 2004. Kweon is relied upon by the Examiner for its teaching that it is known to have needle-shaped bristles.

As stated above, it would have been obvious to modify the bristles of Moskovich to be needle-shaped, as Kwon teaches, so as to provide bristles that can comfortably clean a users teeth and gums, and further it would have been obvious for one of ordinary skill in the art at the time of the invention to modify the lengths of each of the bristles of Moskovich so that the ones at the outer edge of the head are longer than the bristles set in a central portion of the head by 1.5-3.5 mm, as Trojanowski teaches, so that the outer rows of tufts can access and clean the subgingival regions of the teeth while brushing ones teeth, and lastly it would have been obvious to conventionally mount the bristles of Moskovich by providing elliptical elongate grooves in which the dimensions of the major and minor axis of the elongated grooves are in the range of 2.5-5.0 mm and 1.6-2.5 mm as Oishi et al. teach, in order to provide an elliptical elongate tuft dimension that can effectively remove plaque without damaging gingiva and yet remain stiff and durable.

Conclusion

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C. Guidotti whose telephone number is (571) 272-1272. The examiner can normally be reached on Monday-Wednesday, 6am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura C Guidotti/
Primary Examiner, Art Unit 3727

lcg